



**U.S. Department of Energy
Energy Efficiency and
Renewable Energy**

Bringing you a prosperous future where energy
is clean, abundant, reliable, and affordable

INDUSTRIAL TECHNOLOGIES PROGRAM

Reduce NOx and Improve Energy Efficiency

NOx and Energy Assessment Tool (NxEAT) Reduces NOx and Saves Energy

The U.S. Department of Energy's NOx and Energy Assessment Tool (NxEAT) is available at no charge to help the petroleum refining and chemicals industries develop a cost-effective, plant-wide strategy for NOx reduction and energy efficiency improvements.

NxEAT allows the user to inventory existing equipment and study several cost-effective NOx reduction methods and energy-efficient best practices. The user starts this analysis

by selecting options from a list of standard NOx-reducing methods that relate to specific types of equipment, such as fired systems, utility distribution systems, and other energy-consuming systems including pumps, blowers, and compressors. Next, energy-saving options are selected for each section of the plant and, with the help of the NxEAT database, the tool uses this information to calculate NOx reduction, energy savings, and costs. The tool can then be used to generate several detailed



NxEAT allows plants to inventory existing equipment and analyze the effects of NOx-reducing strategies and energy efficiency practices.

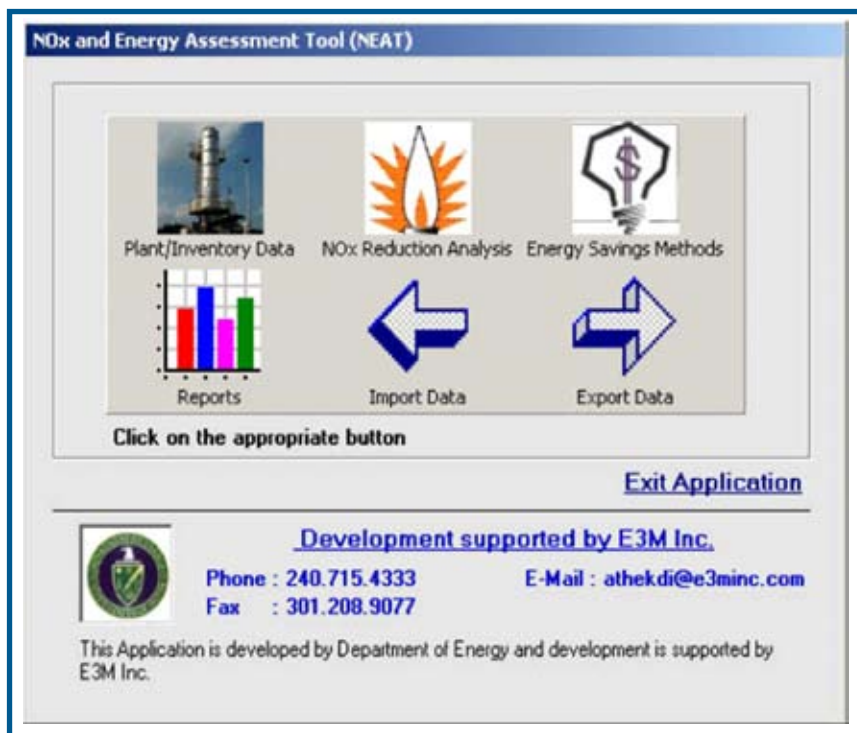


Figure 1: Opening NxEAT screen, which shows user choices such as NOx reduction analysis, energy savings analysis, reports, and data options.

To download the NxEAT and other free software or participate in an on-line tool forum, visit us at:

www.eere.energy.gov/industry/bestpractices/software.html

To learn more, contact the EERE Information Center (1-877-337-3463) or visit the BestPractices web site at www.eere.energy.gov/industry/bestpractices

reports that provide the annual amount of NOx reduction, the cost of the NOx-reducing options, energy savings, and comparisons of the options that were analyzed.

Tool Description

NxEAT provides a systematic approach to estimate NOx emissions and analyze NOx and energy reduction methods and technologies. The tool targets specific systems (e.g., fired heaters, boilers, gas turbines, and reciprocating engines) to help identify the NOx and energy savings potential associated with each option. This tool also provides useful calculators that aid in the comparisons. Outputs from the tool include:

- Profile of a plant's current NOx emissions, energy use, and annual energy cost for NOx-generating equipment.
- Calculations and comparisons of NOx emission and capital reduction for each analysis
- Energy savings analysis
- Additional features
 - Tables and charts of NOx and energy savings.
 - Import data from NxEAT database.
 - Export your own data to the existing NxEAT database.

NxEAT was developed jointly by the U.S. Department of Energy (DOE), Oak Ridge National Laboratory, E3M, Inc., and Texas Industries of the Future.

Project participants also include: AZTEC Engineering and the Texas Commission on Environmental Quality Pollution Prevention and Industry Assistance Division, and an advisory committee consisting of members from the chemical and petroleum refining industries.

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

For more information contact:
EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov



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